UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,976	08/22/2003	**Martin Lund**	14218US02	1056

23446 7590 12/02/2009

MCANDREWS HELD & MALLOY, LTD
500 WEST MADISON STREET
SUITE 3400
CHICAGO, IL 60661

EXAMINER	
PAN, JOSEPH T	

ART UNIT	PAPER NUMBER
2435	

MAIL DATE	DELIVERY MODE
12/02/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/646,976	LUND, MARTIN	
	Examiner	Art Unit	
	JOSEPH PAN	2435	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 August 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's response filed on August 25, 2009 has been fully considered. Claims 1-24 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 7, 10-12, 18, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Authurs et al. (U.S. Patent No. 4,896,934), hereinafter "Authurs", in view of Sawey (U.S. Patent No. 7,151,777 B2).

Referring to claim 1:

i. Authurs teaches:

A method of providing physical port security in a digital communication system, comprising:

receiving a frame of digital data at a network device (see figure 3 'packet format', of Authurs);

a destination port bit map based on the destination address information contained in said frame of digital data (see figure 3, element 'destination bit-map field'; and column 5, lines 50-54, of Authurs);

comparing said destination port bit map with a physical port security bit map to generate a bit map of allowed destination ports, wherein said physical port security bit map is generated, after said receiving, based on information in said received frame of digital data (see column 5, lines 58-65; column 6, lines 4-9; and column 7, lines 1-3, of Authurs); and

forwarding said frame of digital data to one or more of said allowed destination ports (see figure 1, elements 14-1..14-n 'output ports', of Authurs).

Authurs discloses generating the physical port security bit map. Authurs further discloses the destination port bit map. However, Authurs does not specifically mention generating the destination port bit map.

ii. Sawey teaches a crosspoint switch having multicast functionality, wherein Sawey discloses generating the destination port bit map based on the destination address contained in the frame of the digital data (see figure 4, elements 100 'receive multicast packet', 102 'generate port map mapping multicast address to destination output ports'; and column 7, lines 41-45, of Sawey).

iii. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Sawey into the method of Authurs to generate a destination port bit map.

iv. The ordinary skilled person would have been motivated to have applied the teaching of Sawey into the system of Authurs to generate a destination port bit map, because Authurs teaches "The present invention relates to an optical switch for use in a fiber optic telecommunications network, and more particularly, to an optical switch with multicast capability." (see column 1, lines 5-8, of Authurs, emphasis added). Sawey teaches "The present invention relates generally to packet switching and, more particularly, to a crosspoint switch having multicast functionality." (see column 1, lines 6-8, of Sawey, emphasis added). Therefore, Sawey's teaching could enhance Authurs's system.

Referring to claims 7, 18:

Authurs and Sawey teach the claimed subject matter: a method of providing physical port security in a digital communication system (see claim 1 above). Authurs further discloses the router (see column 2, lines 31-33, of Authurs).

Referring to claim 10:

Authurs and Sawey teach the claimed subject matter: a method of providing physical port security in a digital communication system (see claim 1 above). They further discloses the process (see column 1, line 51, of Sawey).

Referring to claim 11:

Authurs and Sawey teach the claimed subject matter: a method of providing physical port security in a digital communication system (see claim 1 above). Authurs further discloses that the bit map is generated dynamically (see column 5, lines 58-65, of Authurs).

Referring to claim 12:

i. Authurs teaches:

A system for providing physical port security, comprising:

At least one processor within a network device, said network device having a communication port for receiving digital data from a digital communications system and two or more physical data ports for forwarding said digital data, said at least one of processor enables (see figure 1, element 10; and column 2, lines 31-33, of Authurs):

a destination port bit map based on destination address information contained in said received digital data (see figure 3, element 'destination bit-map field'; and column 5, lines 50-54, of Authurs);

Comparing of said destination port bit map within a physical port security bit map to generate a bit map of allowed destination ports, wherein said physical port security bit map is generated, after said receiving, based on information within said received digital data (see column 5, lines 58-65; column 6, lines 4-9; and column 7, lines 1-3, of Authurs); and

Forwarding of said digital data to one or more of said allowed destination ports (see figure 1, elements 14-1..14-n 'output ports', of Authurs).

Authurs discloses generating the physical port security bit map. Authurs further discloses the destination port bit map. However, Authurs does not specifically mention generating the destination port bit map.

ii. Sawey teaches a crosspoint switch having multicast functionality, wherein Sawey discloses generating the destination port bit map based on the destination address contained in the frame of the digital data (see figure 4, elements 100 'receive multicast packet', 102 'generate port map mapping multicast address to destination output ports'; and column 7, lines 41-45, of Sawey).

iii. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Sawey into the method of Authurs to generate a destination port bit map.

iv. The ordinary skilled person would have been motivated to have applied the teaching of Sawey into the system of Authurs to generate a destination port bit map, because Authurs teaches "The present invention relates to an optical switch for use in a fiber optic telecommunications network, and more particularly, to an optical switch with multicast capability." (see column 1, lines 5-8, of Authurs, emphasis added). Sawey teaches "The present invention relates generally to packet switching and, more particularly, to a crosspoint switch having multicast functionality." (see column 1, lines 6-8, of Sawey, emphasis added). Therefore, Sawey's teaching could enhance Authurs's system.

Referring to claims 24:

Authurs and Sawey teach the claimed subject matter: an intermediate network device (see claim 12 above). Authurs further discloses that the bit map is dynamically altered based on a variable parameter (see column 5, lines 58-65, of Authurs).

4. Claims 2-5, 6, 8-9, 13-16, 17, 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Authurs et al. (U.S. Patent No. 4,896,934) in view of Sawey

(U.S. Patent No. 7,151,777 B2), and further in view of Wieget (U.S. Patent No. 6,484,261 B1).

Referring to claims 6, 17, 22:

i. Authurs and Sawey teach the claimed subject matter: a method of providing physical port security in a digital communication system (see claim 1 above). However, they do not specifically mention the IP address.

ii. Wieget teaches a graphical network security policy management wherein Wieget discloses the IP address (see column 2, lines 14 of Wieget).

iii. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Wieget into the method of Authurs and Sawey to use IP address.

iv. The ordinary skilled person would have been motivated to have applied the teaching of Wieget into the system of Authurs and Sawey to use IP address, because Authurs teaches using the information provided in a packet to generate a port bitmap (see column 5, lines 58-65, of Authurs). And IP address is the information contained in the packet. Therefore, Wieget's teaching could enhance the system of Authurs and Sawey.

Referring to claims 2, 13:

Authurs, Sawey, and Wieget teach the claimed subject matter: a method of providing physical port security in a digital communication system (see claim 1 above). They further disclose the logical AND (see column 18, line 7 of Wieget).

Referring to claims 3-5, 14-16, 23:

Authurs, Sawey, and Wieget teach the claimed subject matter: a method of providing physical port security in a digital communication system (see claim 1 above). They further disclose the source address and the destination address (see column 2, lines 8-11, of Weight).

Referring to claims 8, 19:

Authurs, Sawey, and Wieget teach the claimed subject matter: an intermediate network device (see claim 12 above). They further disclose the network file server (see column 10, line 52-55 of Wieget).

Referring to claims 9, 20:

Authurs, Sawey, and Wieget teach the claimed subject matter: an intermediate network device (see claim 12 above). They further disclose the local area network (see column 10, line 52-55 of Wieget).

Referring to claim 10:

Authurs, Sawey, and Wieget teach the claimed subject matter: a method of providing physical port security in a digital communication system (see claim 1 above). They further discloses the process (see column 7, line 62, of Wieget).

Referring to claim 21:

Authurs, Sawey, and Wieget teach the claimed subject matter: an intermediate network device (see claim 12 above). They further disclose the IP data (see column 2, lines 14 of Wieget).

Response to Arguments

5. Applicant's arguments, filed on August 25, 2009, have been fully considered but they are not persuasive.

(a) Applicant argues:

"Initially, the Applicant points out that Arthurs' Output Availability Field in a token is not a physical port security bitmap of allowed destination ports. More specifically, the Output Availability Field of a list of all output ports (not only allowed destination ports), and it indicates which output port has been reserved to receive transmitted data." (see page 10, last paragraph).

Examiner maintains:

Authurs discloses "FIG. 6 illustrates an example of a write phase of the contention resolution algorithm for the case of a switch having eight input ports and eight output ports. The left-hand column of FIG. 6 shows the Source Address (SA) Field and Destination Bit Map (d.sub.i .multidot.d.sub.8) of the packets present at each of the input ports SA=1 . . . SA=8 (i.e. input ports 12-1 . . . 12-N of FIG. 1, where N=8). The right-hand column of FIG. 6 shows the token as it sequentially passes each of the eight input ports SA=1 . . . SA=8.

Note that **the packet** at the input port with SA=1 [i.e., the received frame of digital data] is a multicast packet. In particular, its Destination Bit Map Field indicates that d.sub.7 =1 and d.sub.3 =1 so that this packet is to be routed to output ports 7 and 3 (i.e. output ports 14-7 and 14-3 of FIG. 1). Since, the token leaves the token generator 31 with a clear Output Port Availability field and the input port with SA=1 is the first input port reached by the token, a.sub.3 and a.sub.7 are set to logic "1" in the **"Output Availability" field** of the token [i.e., generate the Output Availability Field based on the received frame of digital data], and the address "1" for the first input port is written into the subfields A3 and A7 of the Source Address Field of the token. The token then passes to the input port with SA=2 (corresponding to input port 12-2 in FIG. 1).

The packet at the input port with SA=2 has d.sub.4 =1 in its Destination Bit Map Field. Thus, this packet is a point-to-point (i.e. a unicast) packet to be routed to the output port 4 (corresponding to output 14-4 of FIG. 1). Thus, the input port with SA=2 modifies the Output Availability field of the token so that a.sub.4 =1 and so that the source address SA=2 is written into the corresponding Source Address subfield A.sub.4.

In this manner, the token is modified as it moves from input port to input port along the track 31. In the example of FIG. 6, it should be noted that the input port SA=7 (corresponding to input port 12-7) is idle, i.e. no destinations are indicated in its Destination Bit Map field. In addition, the input ports SA=4,5, and 6 (i.e. 12-4, 12-5, 12-6 of FIG. 1) are contending for output ports already reserved by other input ports. Thus, these input ports do not modify the token and are required to wait for the next transmission cycle to compete again for transmission.

The example of FIG. 6 shows clearly how the optical switch of the present invention successfully integrates unicast, broadcast and multicast applications.
." (see figure 6; and column 6, line 42 to column 7, line 19, of Authurs, emphasis added)

Therefore, Authurs discloses that the Output Availability Field of a token contains the physical port security bit map of only allowed ports.

(b) Applicant argues:

"In this regard, Arthurs' Output Availability Field is not generated after receiving of the frame of digital data." (see page 11, 2nd paragraph).

Examiner maintains:

Authurs discloses "The operation of the switch 10 of FIG. 1 may be described as follows. **Packets arriving** [i.e., receive the frame of digital data] via the incoming trunks 16-1 . . . 16-N are buffered at the
corresponding input ports 12-1 . . . 12-N. These packets are transmitted fromthe input ports 12-1 . . . 12-N to the output ports 14-1 . . . 14-N in transmission cycles.

Each transmission cycle comprises two control phases and a transmission phase. During the first control phase, **a token generated** [i.e., generate the token field Output Availability Field (physical port security bit map)] by the token generator 32 is passed sequentially along the track 31 from one input port 12 to the next. The input ports 12 write information into the token indicating the output ports 14 to which their packets are to be sent." (see column 4, line 63 to column 5, line 7, of Authurs, emphasis added).

Therefore, Authurs discloses that the Output Availability Field is generated after receiving of the frame of digital data, such as disclosed in the claimed invention.

(c) Applicant argues:

"Furthermore, generating of Arthurs' Output Availability Field is also not based on information in the received frame of digital data (since it was generated prior to the digital data is even transmitted to the output ports)." (see page 11, 2nd paragraph).

Examiner maintains:

Authurs discloses that the Output Availability Field is generated based on the received frame of digital data (see (a) above).

Conclusion

6. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Pan whose telephone number is 571-272-5987.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached at 571-272-3859. The fax and phone numbers for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

/Joseph Pan/

Examiner, Art Unit 2435

November 24, 2009

/Kimyen Vu/

Supervisory Patent Examiner, Art Unit 2435